REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed December 8, 2003 (Paper No. 11). Upon entry of this response, claims 1-9, 12-20 and 43-50 remain under consideration. Claims 1-9, 12-20, and 41-42 have been amended, claims 10-11 and 21-40 have been canceled, and claims 43-50 have been added. Applicant asserts that the amendments add no new subject matter to the present application. Applicant respectfully requests that the amendments being filed herewith be entered and request that there be reconsideration of all pending claims.

1. <u>Rejection of Claims 1, 3, 7-12, 14, 18-21, 40, and 42 under 35 U.S.C. §103</u>

Claims 1, 3, 7-12, 14, 18-21, 40, and 42 have been rejected under §103(a) as allegedly obvious over *Neal* (U.S. 6,324,534) in view of *Ozawa et al.* (JP. Patent No. 7-271798). Applicant respectfully traverses these rejections. It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly, all elements/features/steps of the claim at issue. *See, e.g., In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981).

a. <u>Claims 1 and 12</u>

Applicant respectfully submits that claims 1 and 12 are allowable for at least the reason that the proposed combination of *Neal* in view of *Ozawa et al.* does not disclose, teach, or suggest at least the feature of "calculating a probability of each search rule locating the target record" as recited in amended claims 1 and 12.

Ozawa et al. teaches a method for evaluating the efficiency of multiple information retrieval techniques. To evaluate a particular retrieval technique, a set of "data to be retrieved" is

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input to the system, and "retrieved data that match data to be retrieved" is produced as intermediate output. (Sections 8 and 14). Two evaluation values are produced which measure how well this particular set of retrieved data matches the input data when the particular retrieval technique is used. (Sections 8 and 14). One of the two evaluation values is an "external value" representing whether or not the retrieved data matches the input data, as determined by human judgment. (Sections 8, 22, 23, 32-34). The other (internal) evaluation value represents whether or not the retrieved data matches the input data, as determined by the information retrieval system. (Sections 8 and 14). The two evaluation values are then compared to determine whether or not the human-determined valued and the system-determined value agree, and a single "datum evaluation value" is output as a result. (Sections 8, 14, and 21).

The evaluation values disclosed by *Ozawa et al.* do not measure "the probability of each search rule locating the target record" as recited in claims 1 and 12. Rather, the evaluation values in *Ozawa et al.* measure the strength of the match between a particular set of retrieved data and the input target data, where this strength is evaluated by either a group of persons, or by the information retrieval system itself. These values are not a measure of the <u>probability</u> that a particular rule will locate a match with the target record.

Neal discloses an electronic catalog system that accepts a text search string from a user, then applies a number of different search strategies to search a database using the search string. Examples of search strategies are: exact match (Col. 6, lines 35-40); stem match (Col. 6, lines 55-60); soundex (Col. 8, lines 1-5); and "word wheel," which tests permutations and combinations of search string (Col. 7, lines 15-25). The system ranks "the degree of similarity between each matched database record with the search string" (Col. 7, lines 49-55). Matching

records are displayed in a display list (302 in FIG. 3) containing identifying information for each record (*e.g.*, category, name, part number, description, *etc.*).

Neither *Ozawa et al.* nor *Neal* contains any teaching of "calculating a probability of each search rule locating the target record," as recited in amended claims 1 and 12. Thus, a *prima facie* case establishing an obviousness rejection has not been made and claims 1 and 12 are not obvious under the proposed combination of *Neal* in view of *Ozawa et al.* Therefore, the rejection should be withdrawn.

b. <u>Claims 3 and 14</u>

Applicant respectfully submits that claims 3 and 14 are allowable for at least the reason that the proposed combination of *Neal* in view of *Ozawa et al.* does not disclose, teach, or suggest at least the feature of "one of the collected counts corresponds to a number of instances that a search rule retrieves one or more records as possible matches to the target record" as recited in amended claims 3 and 14.

The Office Action alleges that the above limitation is disclosed in Section 8 of *Ozawa et al.* (Office Action, p. 5.) Applicant respectfully disagrees. Applicant can find no teaching in the cited passage of a count of any kind, including the number of times that a particular search rule finds a possible match with the target record. Furthermore, Applicant can find no such teaching anywhere in *Ozawa et al.* or *Neal*. Thus, a *prima facie* case establishing an obviousness rejection has not been made, and claims 3 and 14 are not obvious under the proposed combination of *Neal* in view of *Ozawa et al.* Therefore, the rejection should be withdrawn.

Furthermore, because claim 1 and 12 are believed to be allowable over the cited art of record, Applicant respectfully submits that claims 3 and 14 (which depend from independent claims 1 and 12) are allowable as a matter of law for at least the reason that the dependent claims 3 and 14 contain all elements of independent claims 1 and 12, respectively. *In re Fine*,

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837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 3 and 14 be withdrawn.

    c.   Claim 7 and 18

Applicant respectfully submits that claims 7 and 18 are allowable for at least the reason that the proposed combination of *Neal* in view of *Ozawa et al.* does not disclose, teach, or suggest at least the feature of "one of the collected counts corresponds to a number of instances that a search rule retrieves a plurality of records, wherein the plurality of records are subsequently determined to correspond to the target record" as recited in amended claims 7 and 18.

The Office Action alleges that the above limitation is disclosed in Section 8 of *Ozawa et al.* (Office Action, p. 5). Applicant respectfully disagrees. Applicant can find no teaching in the cited passage of a count of any kind, including the number of times a particular search rule finds a set of records that are later determined to be a match with the target record. Furthermore, Applicant can find no such teaching anywhere in *Ozawa et al.* or *Neal*. Thus, a *prima facie* case establishing an obviousness rejection has not been made, and claims 7 and 18 are not obvious under the proposed combination of *Neal* in view of *Ozawa et al.* Therefore, the rejection should be withdrawn.

Furthermore, because claim 1 and 12 are believed to be allowable over the cited art of record, Applicant respectfully submits that claims 7 and 18 (which depend from independent claims 1 and 12) are allowable as a matter of law for at least the reason that the dependent claims 7 and 18 contain all elements of independent claims 1 and 12, respectively. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 7 and 18 be withdrawn.

d. Claims 8 and 19

Applicant respectfully submits that claims 8 and 19 are allowable for at least the reason that the proposed combination of *Neal* in view of *Ozawa et al.* does not disclose, teach, or suggest at least the feature of "one of the collected counts corresponds to the number of records of the plurality of retrieved records determined not to be the target record" as recited in amended claims 8 and 19.

The Office Action alleges that the above limitation is disclosed in Section 8 of *Ozawa et al.* (Office Action, p. 6.) Applicant respectfully disagrees. Applicant can find no teaching in the cited passage of a count of any kind, including the number of retrieved records determined not to be a match with the target record. Furthermore, Applicant can find no such teaching anywhere in *Ozawa et al.* or *Neal*. Thus, a *prima facie* case establishing an obviousness rejection has not been made and claims 8 and 19 are not obvious under the proposed combination of *Neal* in view of *Ozawa et al.* Therefore, the rejection should be withdrawn.

Furthermore, because claim 1 and 12 are believed to be allowable over the cited art of record, Applicant respectfully submits that claims 8 and 19 (which depend from independent claims 1 and 12) are allowable as a matter of law for at least the reason that the dependent claims 8 and 19 contain all elements of independent claims 1 and 12, respectively. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 8 and 19 be withdrawn.

e. Claims 9 and 20

Because claim 1 and 12 are believed to be allowable over the cited art of record, Applicant respectfully submits that claims 9 and 20 (which depend from independent claim 1 and 12) are allowable as a matter of law for at least the reason that the dependent claims 9 and 20 contain all elements of independent claim 1 and 12. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d

1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claims 9 and 20 be withdrawn.

f. Claims 10-11, 21, and 40

Claims 10-11, 21, and 40 are canceled without prejudice, waiver, or disclaimer, and therefore, the rejection of these claims is rendered moot. Applicant takes this action merely to reduce the number of disputed issues and to facilitate early allowance and issuance of other claims in the present application. Applicant reserves the right to pursue the subject matter of these canceled claims in a continuing application, if Applicant so chooses, and does not intend to dedicate any of the canceled subject matter to the public.

g. Claim 42

Applicant respectfully submits that claim 42 is allowable for at least the reason that the proposed combination of *Neal* in view of *Ozawa et al.* does not disclose, teach, or suggest at least the feature of "calculating a percentage of possible matches found by a rule that are determined to be actual matches" as recited in amended claim 42.

The Office Action (p. 7) alleges that the above limitation is disclosed in Section 8 of *Ozawa et al.* Applicant respectfully disagrees. The cited passage in *Ozawa et al.* appears to disclose calculating how well that the retrieved data matches the target data, according to either human judgment or judgment by the retrieval system. Furthermore, Applicant can find no such teaching anywhere in *Ozawa et al.* or anywhere in *Neal*. Thus, a *prima facie* case establishing an obviousness rejection has not been made and claim 42 is not obvious under the proposed combination of *Neal* in view of *Ozawa et al.* Therefore, the rejection should be withdrawn.

Furthermore, because claims 1 and 12 are believed to be allowable over the cited art of record, Applicant respectfully submits that claim 42 (which depends from independent claim 1 and 12) is allowable as a matter of law for at least the reason that the dependent claim 42

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contains all elements of independent claim 1 and 12. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection of claim 42 be withdrawn.

2. Rejection of Claims 2, 4, 13, 15, and 41 under 35 U.S.C. §103

Claims 2, 4, 13, 15, and 41 have been rejected under §103(a) as allegedly obvious over *Neal* (U.S. 6,324,534) in view of *Ozawa et al.* (JP. Patent No. 7-271798) and further in view of *Natarajan et al.* (U.S. 4,752,890). Applicant respectfully traverses these rejections. It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly, all elements/features/steps of the claim at issue. *See, e.g., In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981).

a. Claims 2, 4, 13, and 15

Because claims 1 and 12 are believed to be allowable over the cited art of record, Applicant respectfully submits that claims 2, 4, 13, and 15 (which depend from independent claims 1 and 12) are allowable as a matter of law for at least the reason that the dependent claims 2, 4, 13, and 15 contain all elements of independent claims 1 and 12. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicant respectfully requests that the rejection to claims 2, 4, 13, and 15 be withdrawn.

b. Claim 41

Applicant respectfully submits that claim 41 is allowable for at least the reason that the proposed combination of *Neal* in view of *Ozawa et al.* and further in view of *Natarajan et al.*

does not disclose, teach, or suggest at least the feature of "calculating a percentage of rule firings in which a corresponding search rule finds a possible match" as recited in claim 41.

The Office Action (p. 5, paragraph 2) alleges that *Natarajan et al.* discloses the above element in Col. 6, lines 8-11. Applicant respectfully disagrees. In the passage cited in the Office Action, *Natarajan et al.* discloses counting the total number of times that each rule is fired (FREQ), counting the number of times a rule has been tested for firing (ATTEMPTS), and calculating the "estimate of the ratio of probability of firing to cost per test for each rule." (Col. 6, lines 20-25.)

However, when the teachings of *Natarajan et al.* are considered in total, calculating the "probability of firing" described in *Natarajan et al.* is clearly not "calculating a percentage of rule firings in which a corresponding search rule finds a possible match" as recited in claim 41. According to *Natarajan et al.*, an "adaptive mechanism is provided which reorders a chain of decisions based on observations made during their execution in order to produce an ordering that achieves faster execution." (Col. 6, lines 20-25.) *Natarajan et al.* further discloses:

> Typical of the applications where this mechanism can be effectively used are certain kinds of expert systems and fault diagnosis systems. An expert system often requires that a list of rules be scanned. As soon as an applicable rule is found, the rule is fired and the scanning of the list of rules is repeated. Associated with each rule are a cost (e.g., number of instructions or execution time) of deciding whether the rule is applicable and a probability with which the rule will fire.

(Col. 4, line 45 to Col. 5, line 10.) Thus, in the system described in *Natarajan et al.*, a list of rules is scanned, and each is evaluated to determine if it is applicable (*i.e.*, the rule is "tested for firing"). If so, the applicable rule is fired. The "probability" described in *Natarajan et al.* is the probability that a rule will be determined to be applicable and will therefore be fired. Rules are

described as "firing" and "being scanned," but there is no discussion in *Natarajan et al.* of a rule producing a match with a target record.

In contrast, in the Applicant's invention as defined in claim 41, search rules are executed in order to find a match with a target record, and the execution of each rule results in a set of retrieved records. The retrieved records in the set may be exact matches to the target, possible matches to the target, or non-matches to the target, and counts are kept of each. From these counts, the invention calculates "a percentage of rule firings in which a corresponding search rule finds a possible match," as recited in claim 41.

Neither *Ozawa et al.* nor *Neal* nor *Natarajan et al.* teaches "calculating a percentage of rule firings in which a corresponding search rule finds a possible match," as recited in claim 41. Thus, a *prima facie* case establishing an obviousness rejection has not been made and claim 41 is not obvious under the proposed combination of *Neal* in view of *Ozawa et al.* and further in view of *Natarajan et al.* Therefore, the rejection should be withdrawn.

3. Rejection of Claims 5, 6, 16, and 17 under 35 U.S.C. §103

Claims 5, 6, 16, and 17 have been rejected under §103(a) as allegedly obvious over *Neal* (U.S. 6,324,534) in view of *Ozawa et al.* (JP. Patent No. 7-271798) and further in view of *Megiddo et al.* (U.S. 6,182,070). Applicant respectfully traverses these rejections. It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly, all elements/features/steps of the claim at issue. *See, e.g., In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981).

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a. <u>Claims 5 and 16</u>

Applicant respectfully submits that claims 5 and 16 are allowable for at least the reason that the proposed combination of *Neal* in view of *Ozawa et al.* and further in view of *Megiddo et al.* does not disclose, teach, or suggest at least the feature of "one of the collected counts corresponds to a number of instances that a search rule retrieves a record previously retrieved by a previously executed search rule" as recited in amended claims 5 and 16.

The Office Action (p. 9, paragraph 6) alleges that *Megiddo et al.* discloses the above element in Col. 9, line 60 to Col. 10, line 62. Applicant respectfully disagrees. The cited passage in *Megiddo et al.* appears to disclose a method for determining the statistical significance of an association rule, which includes the steps of: generating a synthetic database from the original database using random seeds (Col. 10, line 17-21); discovering association rules in the synthetic databases (Col. 10, lines 53-54); computing a p-value for the rules in the synthetic datasets (Col. 10, lines 54-56); and ranking the p-values (Col. 10, lines 56-59). Applicant can find no discussion of any kind of count, or of retrieval of a record previously retrieved by an executed search rule.

Neal discloses an electronic catalog system that accepts a text search string from a user, then applies a number of different search strategies to search a database using the search string. *Neal* does not disclose, teach or suggest "one of the collected counts corresponds to a number of instances that a search rule retrieves a record previously retrieved by a previously executed search rule," as recited in claims 5 and 16.

Ozawa et al. teaches a method for evaluating the efficiency of multiple information retrieval techniques. *Ozawa et al.* discusses "evaluation values" which measure how well that a particular set of retrieved data matches the input data when a specific retrieval technique is used. However, *Ozawa et al.* does not disclose, teach or suggest "one of the collected counts

corresponds to a number of instances that a search rule retrieves a record previously retrieved by a previously executed search rule," as recited in claims 5 and 16.

Neither *Ozawa et al.* nor *Neal* nor *Megiddo et al.* teaches "one of the collected counts corresponds to a number of instances that a search rule retrieves a record previously retrieved by a previously executed search rule," as recited in claims 5 and 16. Thus, a *prima facie* case establishing an obviousness rejection has not been made, and claims 5 and 16 are not obvious under the proposed combination of *Neal* in view of *Ozawa et al.* and further in view of *Megiddo et al.* Therefore, the rejection should be withdrawn.

   b. Claims 6 and 17

Applicant respectfully submits that claims 6 and 17 are allowable for at least the reason that the proposed combination of *Neal* in view of *Ozawa et al.* and further in view of *Megiddo et al.* does not disclose, teach, or suggest at least the feature of "one of the collected counts corresponds to a number of instances that a search rule retrieves a record that was not retrieved by a previously executed search rule" as recited in amended claims 6 and 17.

The Office Action (p. 10) alleges that *Megiddo et al.* discloses the above element in Col. 9, line 60 to Col. 10, line 62. Applicant respectfully disagrees. The cited passage in *Natarajan et al.* appears to disclose a method for determining the statistical significance of an association rule, which includes the steps of: generating a synthetic database from the original database using random seeds (Col. 10, line 17-21); discovering association rules in the synthetic databases (Col. 10, lines 53-54); computing a p-value for the rules in the synthetic datasets (Col. 10, lines 54-56); and ranking the p-values (Col. 10, lines 56-59). Applicant can find no discussion of any kind of count, or of retrieval of a record that was not previously retrieved by an executed search rule.

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Neal discloses an electronic catalog system that accepts a text search string from a user, then applies a number of different search strategies to search a database using the search string. *Neal* does not disclose, teach or suggest "one of the collected counts corresponds to a number of instances that a search rule retrieves a record that was not retrieved by a previously executed search rule," as recited in claims 6 and 17.

Ozawa et al. teaches a method for evaluating the efficiency of multiple information retrieval techniques. *Ozawa et al.* discusses "evaluation values" which measure how well that a particular set of retrieved data matches the input data when a specific retrieval technique is used. However, *Ozawa et al.* does not disclose, teach or suggest "one of the collected counts corresponds to a number of instances that a search rule retrieves a record that was not retrieved by a previously executed search rule," as recited in claims 6 and 17.

Neither *Ozawa et al.* nor *Neal* nor *Megiddo et al.* teaches "one of the collected counts corresponds to a number of instances that a search rule retrieves a record that was not retrieved by a previously executed search rule," as recited in claims 6 and 17. Thus, a *prima facie* case establishing an obviousness rejection has not been made, and claims 6 and 17 are not obvious under the proposed combination of *Neal* in view of *Ozawa et al.* and further in view of *Megiddo et al.* Therefore, the rejection should be withdrawn.
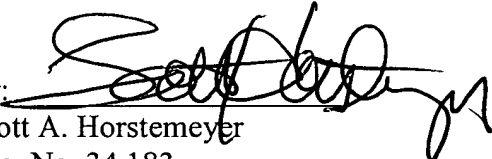
4. Newly Added Claims

New claims 43-50 are based on subject matter that is explicit and/or inherent within the description of the specification and/or the drawings. Applicant submits that no new matter has been added in new claims 43-50, and that these new claims are allowable over the cited prior art. Therefore, Applicant requests the Examiner to enter and allow the above new claims.

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CONCLUSION

Applicant respectfully requests that all outstanding objections and rejections be withdrawn and that this application and presently pending claims 1-9, 12-20 and 41-50 be allowed to issue. If the Examiner has any questions or comments regarding Applicant's response, the Examiner is encouraged to telephone Applicant's undersigned counsel.

Respectfully submitted,

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